

EXHIBIT 11

Expert Rebuttal Report of

**Dr. Harold W. Goldstein
Dr. Charles A. Scherbaum**

Darryl Chalmers, et al. v. City of New York

Case No. 1:20-cv-03389-AT

Harold W. Goldstein, Ph.D.
Charles A. Scherbaum, Ph.D.
Siena Consulting
7/9/2021

Contents

Overview	3
Critique #1: The jobs are not comparable because there is little mobility between jobs and few cross job applications	5
Critique #2: The jobs are not comparable because the exam content and education requirements are not identical	7
Critique #3: Our analysis focuses on the hourly wage rate instead of total compensation and therefore is flawed.....	10
Critique #4: There are inaccuracies or flaws in some of the data and analyses.....	12
Conclusions	15
Appendix A.....	16

Overview

In our initial report, we examined four primary questions including (1) whether the FDNY inspector job titles are similar to the DOB inspector job titles in terms of the nature of the work that is performed by those in these job titles, (2) whether there are disparities in the race composition between inspectors in the FDNY and inspectors in the DOB, (3) whether there are statistically significant disparities in the compensation received between inspectors in the FDNY and inspectors in the DOB, and (4) based on the comparison of the jobs whether there is a job-relevant rationale based on the nature of the work for why the job should be paid differently. Based on our review and analysis, we found that:

- The DOB and FDNY inspector job titles perform similar task and work activities based on information available in O*NET and the limited job analysis information provided by the City;
- The City has not produced sufficient documents to determine whether based on the information in those documents the DOB and FDNY inspector job titles have similar knowledge, skill, and ability requirements, but based on the information available in O*NET, they do have similar knowledge, skill, and ability requirements;
- The DOB inspector job titles are predominately White and the FDNY inspector job titles are predominately Minority;
- The DOB inspectors are paid statistically significantly more per hour than FDNY inspectors even after taking job-relevant factors into account;
- Given the similarity in the work performed and capabilities needed to perform that work, it is unclear why there is a large disparity in the pay, and we have not seen any job-relevant reasons related to the nature of the work that support this difference in pay.

In his rebuttal report, Dr. Erath's offers four primary critiques of our findings and conclusions:

- 1) The jobs are not comparable because there is little employee mobility between these jobs and there are few cross job applications;
- 2) The jobs are not comparable because the exam content and education requirements are not identical;
- 3) The analysis focuses on the hourly wage rate instead of total compensation and therefore is flawed;
- 4) There are inaccuracies in some of the data and analyses.

As we describe in our rebuttal report, these critiques are generally unfounded, unsupported, inaccurate, or misleading. In the following sections of this report, we examine each of these critiques and the various reasons for why they are flawed. Moreover, these critiques do not directly refute the findings from our original report. As he notes in his report, Dr. Erath is not an expert in job analysis or the professionally accepted methodologies for determining job similarity, which should greatly limit his ability to provide opinions on our conclusions regarding the similarity of the FDNY and DOB inspector jobs that are based on these methods. In addition, while Dr. Erath notes some possible errors in the data and analysis, he does not dispute our finding that there are statistically significant differences in the race composition of the FDNY and DOB inspector jobs or present a counter analysis showing a different result. Similarly, Dr.

Erath does not dispute our finding that there are statistically significant differences in the hourly wage rate at both the new hire and incumbent levels between the inspector job titles at the FDNY and DOB or provide a counter analysis showing a different result. In sum, the opinions in our original report are sound and unrebutted.

Critique #1: The jobs are not comparable because there is little mobility between jobs and few cross job applications

Dr. Earth opines that the DOB and FDNY inspector jobs cannot be similar because there is little mobility from FDNY inspectors to DOB inspectors. As he notes on page 3 of his report,

“Similar jobs with different pay should lead to attempted and actual movement into the higher-paying job, yet neither occurred.”

Dr. Earth provides no support from the scientific or professional literature on this approach to determining the similarity of jobs. On the face it, we see a number of flaws in drawing the conclusion that jobs are not similar if there is little mobility between them from the lower paying to the higher paying job. From our field of human resources and Industrial-Organizational psychology, research shows there are many reasons in addition to compensation as to why people choose to apply for jobs or choose not to apply for jobs (e.g., organizational culture, development opportunities, relationships with coworkers, work hours, relationship with supervisor) so we do not view this approach as substantive evidence of job similarity.¹

As we noted in our report, there are very well-documented scientific methodologies in our field to examine the nature of jobs to determine their similarity called job analysis.² We regularly use the science of job analysis to understand the nature of work through the systematic study of what activities are done on a job and what capabilities are required to perform these activities. Job analysis can be used to determine the degree of overlap in the content between jobs. As the EEOC notes, job content is what determines if jobs are comparable.³ The scientific literature, professional practice, and EEO regulatory agencies are crystal clear that job content identified using job analysis methods are the accepted basis for determining job similarity.⁴ Dr. Erath’s observation that there is not much mobility between the inspector jobs is not a professionally accepted method of determining job similarity.

While the City did not provide comparable job analysis information, we used the United States Department of Labor’s Occupational Information Network (O*NET), a comprehensive publicly available job analysis system database as well as available information from the City to compare the DOB and FDNY inspector jobs for similarity. Using this accepted scientific methods for

¹ Gatewood, R., Field, H.S., & Barrick, M. (2015). *Human Resource Selection (8th edition)*. New York: Cengage Learning.

Chapman, D. S., Uggerslev, K. L., Carroll, S. A., Piasentin, K. A., & Jones, D. A. (2005). Applicant attraction to organizations and job choice: a meta-analytic review of the correlates of recruiting outcomes. *Journal of applied psychology*, 90(5), 928.

² Gatewood, R., Field, H.S., & Barrick, M. (2015).

McCormick, E. J. (1979). *Job analysis: Methods and applications*. New York: American Management Association.

Morgeson, F. P., Brannick, M. T., & Levine, E. L. (2019). *Job and work analysis: Methods, research, and applications for human resource management*. Sage Publications.

³ [Equal Pay/Compensation Discrimination | U.S. Equal Employment Opportunity Commission \(eeoc.gov\)](https://www.eeoc.gov/equal-pay)

⁴ Gatewood, R., Field, H.S., & Barrick, M. (2015).

McCormick, E. J. (1979).

Morgeson, F. P., Brannick, M. T., & Levine, E. L. (2019).

studying jobs, we found substantive support for the similarity of the DOB and FDNY inspector jobs.

In conclusion, Dr. Erath's methodology of examining job similarity though job mobility does not seem scientific or rigorous. Given the lack of citations to the labor economics literature or professional practice and regulatory guidelines, we wonder if there is any support for approaching the problem in this way. Instead, an in-depth analysis of the jobs in the manner regularly endorsed by our field and the regulatory agencies provides the only direct case for examining the similarity of the jobs.

Critique #2: The jobs are not comparable because the exam content and education requirements are not identical

Dr. Erath's second critique is that the jobs are not similar because they have different education and experience requirements and the tests used to hire focus on different job content (e.g., knowledge, skills, and abilities (KSAs)). Dr. Erath reasons that there is little mobility between the DOB and FDNY inspector jobs because of these differences and that this serves as evidence that the jobs are not similar. Dr. Erath relies on the Notice of Examinations (NOEs) for the DOB and FDNY inspector jobs for this information regarding education and experience requirements and the content focus of the hiring exams.

We would note that use of solely the NOEs to draw these conclusions is an insufficient manner of determining the similarity of the jobs. As Dr. Erath notes in his report, he is not an expert in determining issues of job content. In our field, as noted earlier, we would use rigorous job analysis techniques to determine education and experience requirements for a job and to determine what content (e.g., competencies and KSAs) is appropriate to measure with a hiring exam. In the current situation, the City did not provide comparable in-depth job analysis information that allows us to make this direct comparison. Given this situation, we focused in our previous report on O*NET as a national database that allows us to examine these issues for the DOB and FDNY inspector type jobs. As we noted in our original report, O*NET indicates that these jobs have similar education and experience levels. In addition, O*NET indicates a great deal of overlap in the competencies and KSAs required to do the jobs and thus it could be extrapolated that the content focused on in the hiring exams should be similar. This line of evidence provides substantial support for the idea that the education and experience requirements and the content of the hiring exams should be similar for these jobs.

Again, because we were not provided with comparable job analysis information by the City, one can cautiously look at ancillary materials (that should be and hopefully are based on a job analysis) such as job descriptions, on-boarding materials, training manuals, operating procedure manuals, and even the NOEs to see what they indicate. The NOEs are brief descriptions often written at different levels of specificity which makes it difficult to rely just on them to make a comparison between the jobs (which is why a full job analysis is recommended). Using the NOEs in combination with other ancillary materials as we did in our original report would be a better approach than Dr. Erath's approach of solely looking at the NOEs. Given this, we challenge Dr. Erath's conclusions from just looking at the NOEs; and again, this may be because as Dr. Erath notes he is not an expert in the area of examining job content to determine similarity and the professionally accepted methods for conducting such an analysis.

Additionally, Dr. Erath does not address the evidence we provided in our report that is counter to his opinion. In that report, as noted above, we described the data from the United States Department of Labor's Occupational Information Network (O*NET) on the job duties performed and the knowledge and skills needed in these jobs. Professionally accepted methods reveal a high degree of overlap in the job duties and in the knowledge, skills and abilities required in these jobs at the national level. Given this finding, the test content for the jobs that should be focused

on measuring these critical KSAs should be similar. Also, as noted above and contained in our original report, O*NET indicates that these jobs generally have the same level of educational and experience requirements.

In addition to ignoring the O*NET data, we believe that Dr. Erath is wrong in the conclusions that he draws from the NOEs that the hiring exams do not focus on measuring similar task duties and KSAs. For example, the 2019 NOE for Construction Inspector and the 2020 NOE for Fire Protection Inspector show a great deal of overlap as can be seen in the table below.

2019 NOE Construction Inspector Tasks and Abilities Tested	2020 NOE Fire Protection Inspector Tasks and Abilities Tested	Similar? (Yes/No)
Inspection Procedures	Inspection and Field Work; Technical Expertise	Yes
Communication and Education		
Administrative Duties	Administrative Duties and Record Keeping; Scheduling and Planning	Yes
Written Comprehension	Written Comprehension	Yes
Written Expression	Written Expression	Yes
	Collaboration and Teamwork	
	Problem Sensitivity	
	Deductive Reasoning	
	Inductive Reasoning	
	Information Ordering	
	Spatial Orientation	
	Visualization	
	Memorization	
	Number Facility	
	Mathematical Reasoning	

Thus, while we think this approach of solely looking at NOEs to determine the hiring exam similarity that Dr. Erath used is a very limited way to examine this issue, we find that taking his approach demonstrates a substantial overlap in targeted exam content as described by the NOEs. And on “Communication and Education,” which is the one area of focus for the Construction Inspector that is not explicitly stated for the Fire Protection Inspector, we have seen other evidence that that we noted in our original report that the Fire Protection Inspector must communicate and educate others. Therefore, it may or may not be tested on the exam, but a strong case can be made that it is an important part of the Fire Protection Inspector job. In addition, although there are many areas listed in the table for the Fire Protection Inspector job that are not listed for the Construction Inspector job, we expect that a job analysis would show they are actually still important for the Construction Inspector job. We think this demonstrates the great limitations of solely focusing on NOEs that are written at varying level of completeness and varying levels of specificity as a way of comparing the similarity of the jobs and it is why we would question the use of this narrow analysis by Dr. Erath.

Dr. Erath also claims that the minimum experience and educational requirements are substantially different between the DOB and FDNY inspector jobs based on his review of the NOEs. As stated previously, the NOEs alone are an insufficient basis for drawing such a conclusion and we reiterate that a proper job analysis is necessary to determine the necessary experience and education. Given we have not been provided with comparable job analyses by the City, we looked again to O*NET which indicates a similar level of education and experience for these types of jobs.

Even though we feel Dr. Erath's approach of looking solely at the NOEs is limited, we did examine the NOEs to see what they indicate regarding the minimum experience and educational requirements for the DOB and FDNY inspector jobs. Based on reviewing the NOEs, we think that Dr. Erath's claims are overstated regarding differences in these requirements. The NOEs actually list various similar options for meeting the educational and experience requirements. For example, the 2019 Construction Inspector and 2020 Fire Protection Inspector NOEs provide options related to similar amounts of experience working in jobs involving construction activities, working in jobs involving inspection activities, obtaining certifications/licenses in construction site safety, earning 60 semester credits, and completion of apprentice type programs. The only potential difference that we can identify is that one option on the NOE for the Construction Inspector job is education in the form of 60 credits toward an engineering, architecture, or construction-related degree. However, based on the information that has been made available to us about the job, we question the necessity of that requirement. The recent job analysis provided by the City for the Construction Inspector role presents a list of KSAs necessary to perform that job that do not appear to link to the need for 60 credits toward an engineering, architecture, or construction-related degree. This finding in combination with the fact that O*NET indicates that the jobs have similar education and experience requirements gives us confidence that the jobs are similar, and that Dr. Erath's conclusions are wrong.

Critique #3: Our analysis focuses on the hourly wage rate instead of total compensation and therefore is flawed

Dr. Erath claims that our compensation analyses are flawed because the analyses examine differences in hourly wages (i.e., base salary) instead of total compensation. The logic of this argument is inconsistent with professional practice for the analysis of compensation disparities. Dr. Erath correctly notes that compensation can include many components such as base pay, overtime, incentive pay, or other specific forms of pay (e.g., shift differentials, uniform allowance). The scientific and professional practice literature on conducting analyses of compensation disparities recognize that there can be many components to total compensation and disparities can occur in the total compensation or any of the components that make up the total compensation.⁵

These sources emphasize that compensation disparity analyses must be conducted using comparable compensation indicators.⁶ For example, it would be appropriate to compare hourly wages between two jobs, but it would be inappropriate to compare total compensation if two jobs have different hours worked without adjusting for those differences in hours. In this case, FDNY and DOB inspectors have different standard work hours. DOB inspectors have a work week of 40 hours and FDNY inspectors currently have a work week of 37.5.⁷ If we were to simply compare total compensation or annual salary, there would be an automatic difference in compensation that is attributable, in part, to the difference in hours worked. This difference is compounded by overtime which is at the regular hourly wage rate for the first two and a half hours for FDNY inspectors, but at 1.5 times regular hourly wage rate for DOB inspectors. Using hourly wage rate in the analysis eliminates this problem in comparability.

The scientific and professional practice literature on analyses of compensation disparities in our area of expertise of Industrial-Organization psychology is unequivocal in recognizing that hourly wage rates are a common and appropriate form of compensation to use to examine compensation disparities.⁸ Dr. Erath implies that labor economists do not share that opinion. Although we are not experts in labor economics, we do know that in the second chapter of the 13th edition of *Modern Labor Economics* by Ehrenberg and Smith, it states:

⁵ [Equal Pay/Compensation Discrimination | U.S. Equal Employment Opportunity Commission \(eeoc.gov\)](https://www.eeoc.gov/equal-pay)

⁶ Doverspike, D., Arthur Jr, W., & Flores, C. (2017). Analyzing EEO Disparities in Pay: A Primer on Structuring the Analyses. In S. Morris & E. Dunleavy (Eds.) *Adverse impact analyses: Understanding data, statistics, and risk* (pp. 197-215). Routledge: New York.

Noonan, P.M. & Biddle, D.A. (2010). *Compensation analysis: A practitioner's guide to identifying and addressing compensation disparities*. Biddle Group: Folsom, CA.

Sady, K. & Aamodt, M. (2017). Analyzing EEO disparities in pay. In S. Morris & E. Dunleavy (Eds.) *Adverse impact analyses: Understanding data, statistics, and risk* (pp. 216-238). Routledge: New York.

⁷ The standard work week for FDNY inspectors increased to 37.5 hours from 35 hours during the time frame we examined.

⁸ Doverspike, D., Arthur Jr, W., & Flores, C. (2017).

Noonan, P.M. & Biddle, D.A. (2010).

Sady, K. & Aamodt, M. (2017).

“The nominal wage is what workers get paid per hour in current dollars; nominal wages are most useful in comparing the pay of various workers at a given point in time.” (pg. 34-35).

Based on the book from these experts in labor economics that Dr. Erath has pointed to as an authoritative source, it would suggest that comparing hourly wages, as we have done in our report, is an appropriate approach in labor economics.

Dr. Erath spends the majority of his section on the compensation analysis attempting to argue that our analysis should have included a variety of factors that are not quantified such as possible enjoyment from more free time or the reputation of the FDNY compared to the DOB. In order to be included in an analysis, these factors would need to be quantified and data would need to be available to use in an analysis. Dr. Erath provides no specific means of quantifying these factors, does not identify any available data on these factors, and does not present an analysis that utilizes these factors. His arguments are pure speculation. Dr. Erath presents no data suggesting that these factors are relevant for explaining the disparities in the wages rates paid by the DOB and FDNY, the disparities in the race composition in these job titles, or an analysis that shows they would lead to different results from what we reported.

Overall, Dr. Erath is attempting to imply that if total compensation were used instead of hourly wages and these non-quantified factors were somehow analyzed, there would be no disparities or at least smaller disparities. Dr. Erath presents no counter analyses that supports this notion. If he performed counter analyses that did support this notion, these results would have been included in his report. Nothing in Dr. Erath’s report disputes the finding that there are disparities in hourly wages rates between the inspector jobs at the DOB and FDNY. His attempts to argue that hourly wages were not appropriate for our analysis is simply flawed and inconsistent with the literature on analyses of compensation disparities including his own authoritative source for practices in labor economics.

Critique #4: There are inaccuracies or flaws in some of the data and analyses

The third section of Dr. Erath's report includes a variety of small points where he claims that there are inaccuracies or flaws in the data and analysis. For the most part, these critiques are inaccurate, misleading, or have no impact on the consistent pattern of disparities found in the race composition or hourly wages over 16 years.

- Dr. Erath raises claims that there are inaccuracies in the counts of employees. Overall, he makes broad statements that he can replicate certain figures, but says other figures are wrong without identifying which ones (with the exception of associate construction inspectors in 2020) were moved from associate construction inspector to construction inspector between or if any of the supposed errors change the consistent pattern of disparities that we found. Dr. Erath does not provide counter analyses with the supposed errors fixed that show different patterns of results. Presumably, if these were substantive errors and they changed the results, they would have been included in Dr. Erath's report to rebut our findings. He indicates only three specific errors, and we address each one.
 - a. Dr. Erath's first error states that we did not attempt to fill in the race data. We were puzzled by this complaint as there was no missing race information in the data provided to us and to him.
 - b. Dr. Erath's second error states that employees who were promoted were counted twice. Dr. Erath is correct that some employees who had a job change in to or out of the associate construction inspector job title were counted twice (once in the associate construction job title and once in a different job title). The data for associate construction inspectors were produced by the City less than a week before our report was due. When integrating this supplemental data into the existing data files some employees who were promoted from construction inspector to associate construction inspector between 2005-2018⁹ and some employees who were moved from associate construction inspector to construction inspector between 2019-2020 were counted twice. In 12 of the 16 years we analyzed, six or fewer employees were double counted and in 6 of those 12 years the number was zero. The four years that had more than 6 employees who were included twice were 2007, 2008, 2019, and 2020.
 - i. In 2007 and 2008 more than 6 employees moved into the associate construction inspector job from the construction inspector job. We re-ran the 2007 and 2008 analyses excluding the double counted employees from the construction inspector job title. The results were essentially unchanged. Appendix A contains the updated results. For these years, the new results are added in bold above the old results. All of the results involving construction inspectors were still statistically significant. Removing those double counted employees from the construction inspector job title led to very small changes in the average hourly wages or the regression coefficients.
 - ii. In 2019, more than 6 employees moved into the construction inspector job from the associate construction inspector job. We re-ran the analyses for

⁹ There is one employee who moved from associate hoist and rigging inspector to associate construction inspector in 2008.

2019 excluding the double counted employees from the associate construction inspector job title. Appendix A contains the updated results. For these years, the new results are added in bold above the old results. The results were essentially unchanged. All of the results involving associate construction inspectors were still statistically significant. Removing those employees led to very small changes in the average hourly wages or the regression coefficients.

- c. Dr. Erath's third error states that there were no employees in the associate construction inspector job title in 2020. He is correct. All of the employees reported in the associate construction inspector job title in 2020 were counted twice. The average hourly wages and regression coefficients for this specific job title in Tables 23, 24, and 26 should be disregarded. However, removing these employees did not change the statistical significance of the disparities in the analyses comparing FDNY to DOB in 2020 (Table 22). It also did not change the overall regression results for 2020 (Tables 25 and 26). The only changes are in the comparisons between associate fire protection inspectors and associate construction inspectors. Appendix A contains the updated results. For these years, the new results are added in bold above the old results.
- Dr. Erath complains that our analysis is "static". We are confused by this complaint as compensation disparities are generally a snapshot in time. Our "static" analyses of 16 years are very consistent over time in showing disparities in hourly wages and demographic composition between the DOB and FDNY which indicates that the "static" point is not an issue.
- Dr. Erath critiques our analysis for not taking education into account. As is clearly noted in our initial report on pages 46 and 47, the City of New York does not have accurate or complete data on educational attainment. Therefore, educational attainment cannot be included in the analyses. In other words, one cannot analyze data that does not exist.
- On page 9 of his report, Dr. Erath quite strongly claims that we have used the wrong numbers from the BLS data, and the data show construction inspectors have higher hourly wages than fire protection inspectors. This statement is both wrong and misleading. In the BLS data, there are two different types of job groupings. The first is a broad job grouping that combines many different job titles in reporting wage rates. The second is a detailed job group which breaks up the broad job grouping into more narrow jobs. The BLS provides unique standard occupational codes for the broad and detailed job groupings. It can be the case that the national average wages are different for the broad and detailed standard occupational codes if the broad grouping includes high or low paying jobs. The BLS data includes a broad job grouping called Fire Inspectors (SOC# 33-2020). This broad occupation includes the following two detailed job groups: Fire Inspectors and Investigators (SOC# 33-2021) and Forest Fire Inspectors and Prevention Specialists (SOC# 33-2022). As Dr. Erath notes, our report includes the national wages for Fire Inspectors and Investigators (SOC# 33-2021). Dr. Erath claims that our number is incorrect and that when you look at "Fire Inspectors" the wage rate is lower. Dr. Erath's lower number comes from the broad job grouping (SOC# 33-2020) which includes both Fire Inspectors and Investigators (SOC# 33-2021) and Forest Fire Inspectors and Prevention Specialists (SOC# 33-2022). The reason the wages for the broad job grouping is lower is that Forrest Fire Inspectors and Prevention specialists

make substantially less than Fire Inspectors and Investigators. In other words, Dr. Erath has actually made the mistake that he claims we have made. The numbers in our report are correct and are the only appropriate ones to use. The national data show that Fire Inspectors and Investigators have higher wages nationally than construction inspectors.

Conclusions

Overall, Dr. Erath has failed to substantively rebut any of our findings and has presented no convincing alternative analyses showing different results. Our initial findings that the DOB and FDNY inspector job titles perform similar task and work activities, the DOB inspector job titles are predominately White and the FDNY inspector job titles are predominately Minority, and that the DOB inspectors are paid statistically significantly more per hour than FDNY inspectors even after taking job-relevant factors into account are sound and unrebutted.

If additional data or information becomes available to us following the submission of this report, we reserve the right to supplement the current report based on additional work that we are asked to perform.



Harold W. Goldstein, Ph.D.

7/9/2021

Date



Charles A. Scherbaum, Ph.D.

7/9/2021

Date

Appendix A
Results Tables with Updated Results for 2007, 2008, 2019, and 2020

Table 1

Fiscal Year	FDNY	DOB							
	Fire Protection Inspector	Total	Inspector (Construction)	Inspector (Elevators)	Inspector (Hoists & Rigging)	Inspector (Low Pressure Boiler)	Inspector (Multi-Discipline)	Inspector (Plumbing)	Inspector (Boilers)
2005	121	105	73	0	3	4	0	25	0
2006	131	117	88	0	5	5	0	19	0
2007	139	108	80	0	4	5	0	19	0
	139	132	104	0	4	5	0	19	0
2008	138	144	111	6	3	5	0	19	0
	138	159	126	6	3	5	0	19	0
2009	121	134	99	6	4	5	0	20	0
2010	145	107	80	1	3	5	0	18	0
2011	155	91	65	3	3	5	0	15	0
2012	155	100	54	8	3	9	4	22	0
2013	143	104	52	10	8	9	8	17	0
2014	140	116	61	14	9	7	9	16	0
2015	112	135	79	14	6	7	7	22	0
2016	135	220	115	31	8	13	6	47	0
2017	110	292	177	31	11	18	5	50	0
2018	142	344	229	29	7	16	4	59	0
2019	160	379	273	21	8	15	4	58	0
	160	379	273	21	8	15	4	58	0
2020	181	508	378	37	6	15	5	65	2
	181	508	378	37	6	15	5	65	2

Table 2

Fiscal Year	FDNY	DOB						
	Associate Fire Protection Inspector	Total	Associate Inspector (Construction)	Associate Inspector (Elevators)	Associate Inspector (Hoists & Rigging)	Associate Inspector (Low Pressure Boiler)	Associate Inspector (Plumbing)	Associate Inspector (Boilers)
2005	104	132	67	40	5	3	14	3
2006	105	137	76	40	3	1	12	5
2007	106	170	103	40	2	0	18	7
	106	171	103	40	3	0	18	7
2008	116	173	115	33	1	1	18	5
	116	173	115	33	1	1	18	5
2009	148	177	121	31	2	1	17	5
2010	146	182	133	27	2	1	14	5
2011	152	168	119	27	2	1	14	5
2012	161	161	117	23	2	1	14	4
2013	173	154	113	22	1	1	13	4
2014	169	144	108	19	0	2	11	4
2015	205	158	116	18	2	2	16	4
2016	205	150	108	17	1	3	17	4
2017	215	141	96	18	2	2	19	4
2018	211	126	81	16	2	3	19	5
2019	215	122	79	16	2	3	17	5
	215	147	104	16	2	3	17	5
2020	214	14	0	2	2	1	5	4
	214	112	98	2	2	1	5	4

Table 3

Fiscal Year	FDNY Inspectors		DOB Inspectors		White % DOB/ White % FDNY
	Minority	White	Minority	White	
2005	60.4%	39.6%	35.6%	64.4%	1.63
2006	61.2%	38.8%	36.8%	63.2%	1.63
2007	61.8%	38.2%	38.9%	61.1%	1.60
	61.8%	38.2%	39.7%	60.3%	1.58
2008	63.2%	36.8%	40.8%	59.2%	1.61
	63.2%	36.8%	41.5%	58.5%	1.59
2009	64.6%	35.4%	39.2%	60.8%	1.72
2010	65.1%	34.9%	39.4%	60.6%	1.74
2011	66.3%	33.7%	38.1%	61.9%	1.84
2012	67.2%	32.8%	35.2%	64.8%	1.98
2013	65.9%	34.1%	35.2%	64.8%	1.90
2014	68.4%	31.6%	37.1%	62.9%	1.99
2015	68.1%	31.9%	39.1%	60.9%	1.91
2016	67.7%	32.3%	44.1%	55.9%	1.73
2017	69.5%	30.5%	48.1%	51.9%	1.70
2018	70.5%	29.5%	52.2%	47.8%	1.62
2019	71.7%	28.3%	53.7%	46.3%	1.63
	71.7%	28.3%	53.3%	46.7%	1.65
2020	74.2%	25.8%	56.5%	43.5%	1.69
	74.2%	25.8%	54.3%	45.7%	1.77

Table 4

Inspector Job Titles											
Fiscal Year	Agency	Count		Expected		Difference		Percentage		2SD Test	Fishers Exact Test (2-tailed)
		M	W	M	W	M	W	M	W		
2005	FDNY	75	44	63.9	55.1	11.13	-11.13	63.0%	37.0%	3.04	Significant
	DOB	42	57	53.1	45.9	-11.13	11.13	42.4%	57.6%		
2006	FDNY	82	46	70.9	57.1	11.07	-11.07	64.1%	35.9%	2.87	Significant
	DOB	51	61	62.1	49.9	-11.07	11.07	45.5%	54.5%		
2007	FDNY	89	47	75.4	60.6	13.57	-13.57	65.4%	34.6%	3.58	Significant
		89	47	74.7	61.3	14.25	-14.25	65.4%	34.6%		
	DOB	43	59	56.6	45.4	-13.57	13.57	42.2%	57.8%	3.54	Significant
		55	71	69.3	56.7	-14.25	14.25	43.7%	56.3%		
2008	FDNY	96	39	78.6	56.4	17.37	-17.37	71.1%	28.9%	4.26	Significant
		96	39	78.6	56.4	17.45	-17.45	71.1%	28.9%		
	DOB	63	75	80.4	57.6	-17.37	17.37	45.7%	54.3%	4.18	Significant
		71	81	88.4	63.6	-17.45	17.45	46.7%	53.3%		
2009	FDNY	84	32	65.1	50.9	18.87	-18.87	72.4%	27.6%	4.87	Significant
	DOB	53	75	71.9	56.1	-18.87	18.87	41.4%	58.6%		
2010	FDNY	96	40	78.0	58.0	18.04	-18.04	70.6%	29.4%	4.76	Significant
	DOB	41	62	59.0	44.0	-18.04	18.04	39.8%	60.2%		
2011	FDNY	104	40	85.4	58.6	18.60	-18.60	72.2%	27.8%	5.14	Significant
	DOB	33	54	51.6	35.4	-18.60	18.60	37.9%	62.1%		
2012	FDNY	97	37	71.7	62.3	25.30	-25.30	72.4%	27.6%	6.82	Significant
	DOB	25	69	50.3	43.7	-25.30	25.30	26.6%	73.4%		
2013	FDNY	91	44	68.9	66.1	22.08	-22.08	67.4%	32.6%	5.79	Significant
	DOB	30	72	52.1	49.9	-22.08	22.08	29.4%	70.6%		
2014	FDNY	99	39	75.8	62.2	23.18	-23.18	71.7%	28.3%	5.88	Significant
	DOB	40	75	63.2	51.8	-23.18	23.18	34.8%	65.2%		
2015	FDNY	66	30	51.5	44.5	14.54	-14.54	68.8%	31.3%	3.95	Significant
	DOB	53	73	67.5	58.5	-14.54	14.54	42.1%	57.9%		
2016	FDNY	78	38	64.7	51.3	13.28	-13.28	67.2%	32.8%	3.09	Significant
	DOB	105	107	118.3	93.7	-13.28	13.28	49.5%	50.5%		
2017	FDNY	65	27	52.6	39.4	12.39	-12.39	70.7%	29.3%	3.02	Significant
	DOB	142	128	154.4	115.6	-12.39	12.39	52.6%	47.4%		
2018	FDNY	90	34	76.2	47.8	13.82	-13.82	72.6%	27.4%	3.00	Significant
	DOB	184	138	197.8	124.2	-13.82	13.82	57.1%	42.9%		
2019	FDNY	103	32	85.8	49.2	17.19	-17.19	76.3%	23.7%	3.62	Significant
		103	32	85.8	49.2	17.19	-17.19	76.3%	23.7%		
	DOB	204	144	221.2	126.8	-17.19	17.19	58.6%	41.4%	3.62	Significant
		204	144	221.2	126.8	-17.19	17.19	58.6%	41.4%		
2020	FDNY	116	30	91.2	54.8	24.78	-24.78	79.5%	20.5%	4.85	Significant
		116	30	91.2	54.8	24.78	-24.78	79.5%	20.5%		
	DOB	267	200	291.8	175.2	-24.78	24.78	57.2%	42.8%	4.85	Significant
		267	200	291.8	175.2	-24.78	24.78	57.2%	42.8%		

Table 5

Associate Inspector Job Titles											
Fiscal Year	Agency	Count		Expected		Difference		Percentage		2SD Test	Fishers Exact Test (2-tailed)
		M	W	M	W	M	W	M	W		
2005	FDNY	59	44	43.9	59.1	15.12	-15.12	57.3%	42.7%	4.11	Significant
	DOB	36	84	51.1	68.9	-15.12	15.12	30.0%	70.0%		
2006	FDNY	60	44	43.7	60.3	16.33	-16.33	57.7%	42.3%	4.38	Significant
	DOB	37	90	53.3	73.7	-16.33	16.33	29.1%	70.9%		
2007	FDNY	60	45	47.2	57.8	12.84	-12.84	57.1%	42.9%	3.24	Significant
		60	45	47.0	58.0	13.03	-13.03	57.1%	42.9%		
	DOB	59	101	71.8	88.2	-12.84	12.84	36.9%	63.1%	3.29	Significant
		59	102	72.0	89.0	-13.03	13.03	36.6%	63.4%		
2008	FDNY	62	53	50.4	64.6	11.58	-11.58	53.9%	46.1%	2.85	Significant
		62	53	50.4	64.6	11.58	-11.58	53.9%	46.1%		
	DOB	59	102	70.6	90.4	-11.58	11.58	36.6%	63.4%	2.85	Significant
		59	102	70.6	90.4	-11.58	11.58	36.6%	63.4%		
2009	FDNY	86	61	69.7	77.3	16.27	-16.27	58.5%	41.5%	3.70	Significant
	DOB	62	103	78.3	86.7	-16.27	16.27	37.6%	62.4%		
2010	FDNY	87	58	70.7	74.3	16.34	-16.34	60.0%	40.0%	3.69	Significant
	DOB	67	104	83.3	87.7	-16.34	16.34	39.2%	60.8%		
2011	FDNY	91	59	73.8	76.2	17.22	-17.22	60.7%	39.3%	3.93	Significant
	DOB	60	97	77.2	79.8	-17.22	17.22	38.2%	61.8%		
2012	FDNY	100	59	82.8	76.2	17.16	-17.16	62.9%	37.1%	3.91	Significant
	DOB	61	89	78.2	71.8	-17.16	17.16	40.7%	59.3%		
2013	FDNY	112	61	91.0	82.0	21.00	-21.00	64.7%	35.3%	4.66	Significant
	DOB	60	94	81.0	73.0	-21.00	21.00	39.0%	61.0%		
2014	FDNY	111	58	90.2	78.8	20.83	-20.83	65.7%	34.3%	4.74	Significant
	DOB	56	88	76.8	67.2	-20.83	20.83	38.9%	61.1%		
2015	FDNY	137	65	110.2	91.8	26.82	-26.82	67.8%	32.2%	5.81	Significant
	DOB	55	95	81.8	68.2	-26.82	26.82	36.7%	63.3%		
2016	FDNY	136	64	109.3	90.7	26.70	-26.70	68.0%	32.0%	5.86	Significant
	DOB	52	92	78.7	65.3	-26.70	26.70	36.1%	63.9%		
2017	FDNY	142	64	118.0	88.0	24.02	-24.02	68.9%	31.1%	5.43	Significant
	DOB	51	80	75.0	56.0	-24.02	24.02	38.9%	61.1%		
2018	FDNY	139	62	116.2	84.8	22.80	-22.80	69.2%	30.8%	5.34	Significant
	DOB	46	73	68.8	50.2	-22.80	22.80	38.7%	61.3%		
2019	FDNY	135	62	113.5	83.5	21.52	-21.52	68.5%	31.5%	5.15	Significant
		135	62	111.9	85.1	23.11	-23.11	68.5%	31.5%		
	DOB	43	69	64.5	47.5	-21.52	21.52	38.4%	61.6%	5.22	Significant
		53	81	76.1	57.9	-23.11	23.11	39.6%	60.4%		
2020	FDNY	137	58	117.7	77.3	4.81	-4.81	70.3%	30.7%	2.95	Significant
	DOB	4	9	8.8	4.2	-4.81	4.81	30.8%	69.2%		
		41	59	60.3	39.7	-19.34	19.34	41.0%	59.0%	4.86	Significant

Table 6

Fiscal Year	New Hire				Incumbent			
	FDNY	DOB	Difference per Hour	Statistically Significant	FDNY	DOB	Difference per Hour	Statistically Significant
2005	\$18.22	\$22.52	\$4.29	Yes	\$21.09	\$23.25	\$2.16	Yes
2006	\$18.80	\$23.25	\$4.45	Yes	\$21.76	\$23.81	\$2.05	Yes
2007 ¹⁰	\$20.01	\$23.61	\$3.60	Yes	\$23.09	\$24.87	\$1.78	Yes
	\$19.94	\$23.62	\$3.69	Yes	\$23.09	\$24.88	\$1.79	Yes
2008	\$20.68	\$23.59	\$2.91	Yes	\$24.02	\$26.84	\$2.82	Yes
	\$20.68	\$23.62	\$2.94	Yes	\$24.02	\$26.72	\$2.70	Yes
2009	\$21.57	\$24.02	\$2.45	Yes	\$25.02	\$27.69	\$2.67	Yes
2010	\$21.57	\$23.65	\$2.08	Yes	\$24.97	\$26.30	\$1.32	Yes
2011	\$21.57	\$23.23	\$1.66	Yes	\$24.90	\$26.48	\$1.57	Yes
2012	\$21.57	\$26.16	\$4.60	Yes	\$24.89	\$26.83	\$1.95	Yes
2013	\$21.57	\$27.27	\$5.71	Yes	\$24.85	\$26.81	\$1.96	Yes
2014	\$21.57	\$26.69	\$5.12	Yes	\$24.85	\$28.23	\$3.37	Yes
2015	\$21.57	\$26.43	\$4.87	Yes	\$24.87	\$28.71	\$3.84	Yes
2016	\$21.57	\$29.77	\$8.20	Yes	\$24.87	\$30.44	\$5.57	Yes
2017	\$23.11	\$29.82	\$6.71	Yes	\$26.61	\$30.43	\$3.82	Yes
2018	\$23.81	\$29.69	\$5.88	Yes	\$27.38	\$30.03	\$2.65	Yes
2019	\$23.81	\$29.79	\$5.98	Yes	\$27.45	\$31.63	\$4.19	Yes
	\$23.81	\$29.79	\$5.98	Yes	\$27.45	\$31.63	\$4.19	Yes
2020	\$23.81	\$29.76	\$5.95	Yes	\$27.43	\$34.49	\$7.07	Yes
	\$23.81	\$29.76	\$5.95	Yes	\$27.43	\$34.49	\$7.07	Yes

¹⁰ There was a small editing error in the value for FPI in 2007. The editing error does not impact the overall results or conclusions drawn.

Table 7

Fiscal Year	Fire Protection Inspector	Inspector (Construction)	Inspector (Elevators)	Inspector (Hoists & Rigging)	Inspector (Low Pressure Boiler)	Inspector (Multi-Discipline)	Inspector (Plumbing)	Inspector (Boilers)
New Hire								
2005	\$18.22	\$22.31	---		\$24.16	---	\$22.63	---
2006	\$18.80	\$23.20	---	\$23.12	\$24.39	---	\$23.14	---
2007¹¹	\$20.01	\$23.64	---	\$24.04	\$24.56	---	\$23.18	---
	\$19.94	\$23.65		\$24.04	\$24.56		\$23.18	
2008	\$20.68	\$23.36	\$23.93	\$22.93	\$25.71	---	\$24.34	---
	\$20.68	\$23.41	\$23.93	\$22.93	\$25.71		\$24.34	
2009	\$21.57	\$24.07	\$24.05	\$24.08	\$24.42	---	\$23.42	---
2010	\$21.57	\$23.85	---	\$23.00	---	---	\$23.42	---
2011	\$21.57	---	\$23.23	---	---	---	---	---
2012	\$21.57	\$25.12	\$25.70	---	\$27.33	\$26.12	\$26.12	---
2013	\$21.57	\$24.87	\$26.39	\$31.13	\$27.06	\$28.81	\$27.39	---
2014	\$21.57	\$25.33	\$26.81	\$30.79	---	\$30.23	\$26.23	---
2015	\$21.57	\$25.73	\$27.71	\$32.39	\$27.74	\$32.04	\$26.50	---
2016	\$21.57	\$29.57	\$29.60	\$34.53	\$29.60	---	\$29.62	---
2017	\$23.11	\$29.60	\$29.60	\$34.53	\$29.60	---	\$29.60	---
2018	\$23.81	\$29.60	\$29.60	\$34.53	\$29.60	---	\$29.60	---
2019	\$23.81	\$29.74	\$29.60	\$35.05	\$29.60	---	\$29.64	---
	\$23.81	\$29.74	\$29.60	\$35.05	\$29.60	---	\$29.64	---
2020	\$23.81	\$29.67	\$29.89	\$35.57	\$30.04	---	\$30.17	---
	\$23.81	\$29.67	\$29.89	\$35.57	\$30.04	---	\$30.17	---
Incumbent								
2005	\$21.09	\$23.07	---	\$23.36	\$24.22	---	\$23.86	---
2006	\$21.76	\$23.64	---	\$23.82	\$24.33	---	\$24.47	---
2007	\$23.09	\$24.68	---	\$24.77	\$24.91	---	\$26.34	---
	\$23.09	\$24.74	---	\$24.77	\$24.91	---	\$26.34	---
2008	\$24.02	\$26.65	---	\$26.32	\$26.89	---	\$27.90	---
	\$24.02	\$26.54	---	\$26.32	\$26.89	---	\$27.90	---
2009	\$25.02	\$27.52	\$30.21	\$30.29	\$27.93	---	\$27.79	---
2010	\$24.97	\$25.88	\$26.86	\$28.26	\$27.23	---	\$27.79	---
2011	\$24.90	\$26.04	\$27.13	\$27.41	\$27.50	---	\$27.80	---
2012	\$24.89	\$26.30	\$27.40	\$29.39	\$26.99	---	\$28.19	---
2013	\$24.85	\$25.90	\$26.84	\$33.21	\$27.51	---	\$28.17	---
2014	\$24.85	\$27.08	\$28.41	\$34.81	\$28.16	\$29.99	\$28.96	---
2015	\$24.87	\$27.43	\$28.61	\$33.29	\$28.80	\$30.97	\$30.15	---
2016	\$24.87	\$29.80	\$29.60	\$34.53	\$30.16	\$32.67	\$31.53	---

¹¹ There was a small editing error in the value for FPI in 2007. The editing error does not impact the overall results or conclusions drawn.

Fiscal Year	Fire Protection Inspector	Inspector (Construction)	Inspector (Elevators)	Inspector (Hoists & Rigging)	Inspector (Low Pressure Boiler)	Inspector (Multi-Discipline)	Inspector (Plumbing)	Inspector (Boilers)
2017	\$26.61	\$30.17	\$29.60	\$34.53	\$30.00	\$32.40	\$30.98	---
2018	\$27.38	\$29.86	\$29.60	\$34.53	\$29.64	\$32.99	\$30.10	---
2019	\$27.45	\$31.25	\$31.80	\$36.24	\$31.63	\$37.37	\$31.80	---
	\$27.45	\$31.25	\$31.80	\$36.24	\$31.63	\$37.37	\$31.80	---
2020	\$27.43	\$34.83	\$34.52	\$36.95	\$31.72	\$36.58	\$32.99	\$41.01
	\$27.43	\$34.83	\$34.52	\$36.95	\$31.72	\$36.58	\$32.99	\$41.01

Table 8

Fiscal Year	Fire Protection Inspector vs.						
	Inspector (Construction)	Inspector (Elevators)	Inspector (Hoists & Rigging)	Inspector (Low Pressure Boiler)	Inspector (Multi-Discipline)	Inspector (Plumbing)	Inspector (Boilers)
New Hire							
2005	\$4.09*	---	---	\$5.94*	---	\$4.41*	---
2006	\$4.40*	---	\$4.32*	\$5.60*	---	\$4.35*	---
2007	\$3.62*	---	---	\$4.63*	---	\$3.24*	---
	\$3.71*	---	---	\$4.63*	---	\$3.24*	---
2008	\$2.67*	\$3.25*	---	\$5.02*	---	\$3.65*	---
	\$2.73*	\$3.25*	---	\$5.02*	---	\$3.65*	---
2009	\$2.51*	\$2.48*	\$2.51*	---	---	\$1.85*	---
2010	\$2.28*	---	---	---	---	\$1.85*	---
2011	---	---	---	---	---	---	---
2012	---	\$4.13*	---	\$5.76*	\$4.56*	\$4.56*	---
2013	\$3.31*	\$4.82*	\$9.56*	\$5.49*	\$7.24*	\$5.82*	---
2014	\$3.77*	\$5.25*	\$9.23*	---	\$8.66*	\$4.66*	---
2015	\$4.16*	\$6.15*	---	---	---	\$4.94*	---
2016	\$8.01*	\$8.03*	\$12.97*	\$8.03*	---	\$8.05*	---
2017	---	---	---	---	---	---	---
2018	\$5.79*	\$5.79*	\$10.72*	\$5.79*	---	\$5.79*	---
2019	\$5.93*	\$5.79*	---	\$5.79*	---	\$5.84*	---
	\$5.93*	\$5.79*	---	\$5.79*	---	\$5.84*	---
2020	\$5.87*	\$6.08*	---	---	---	\$6.36*	---
	\$5.87*	\$6.08*	---	---	---	\$6.36*	---
Incumbent							
2005	\$1.98*	---	\$2.27*	---	---	\$2.77*	---
2006	\$1.87*	---	---	---	---	\$2.71*	---
2007	\$1.58*	---	---	---	---	\$3.24*	---
	\$1.64*	---	---	---	---	\$3.24*	---
2008	\$2.63*	---	---	---	---	\$3.88*	---
	\$2.52*	---	---	---	---	\$3.88*	---
2009	\$2.50*	---	---	\$2.91*	---	\$2.77*	---
2010	\$0.91*	---	---	\$2.26*	---	\$2.82*	---
2011	\$1.14*	---	\$2.50*	\$2.60*	---	\$2.90*	---
2012	\$1.41*	---	\$4.50*	\$2.10*	---	\$3.30*	---
2013	\$1.05*	---	\$8.35*	\$2.66*	---	\$3.32*	---
2014	\$2.23*	\$3.56*	\$9.96*	\$3.31*	\$5.14*	\$4.11*	---
2015	\$2.56*	\$3.74*	\$8.42*	\$3.93*	\$6.10*	\$5.28*	---
2016	\$4.93*	\$4.73*	\$9.66*	\$5.29*	\$7.80*	\$6.66*	---
2017	\$3.57*	\$2.99*	---	\$3.39*	\$5.79*	\$4.37*	---
2018	\$2.48*	\$2.21*	\$7.15*	\$2.26*	\$5.60*	\$2.72*	---
2019	\$3.81*	\$4.35*	\$8.79*	\$4.19*	\$9.93*	\$4.35*	---
	\$3.81*	\$4.35*	\$8.79*	\$4.19*	\$9.93*	\$4.35*	---

Fiscal Year	Fire Protection Inspector vs.						
	Inspector (Construction)	Inspector (Elevators)	Inspector (Hoists & Rigging)	Inspector (Low Pressure Boiler)	Inspector (Multi-Discipline)	Inspector (Plumbing)	Inspector (Boilers)
2020	\$7.40*	\$7.09*	\$9.52*	\$4.29*	\$9.15*	\$5.56*	---
	\$7.40*	\$7.09*	\$9.52*	\$4.29*	\$9.15*	\$5.56*	---

Table 9

Year	Model Significance	R^2	Intercept	Incumbent Rate	Tenure in Title	Agency
2005	0.000	0.784	\$19.77	\$0.84	\$0.00	\$2.49
2006	0.000	0.614	\$19.79	\$1.23	\$0.01	\$2.90
2007	0.000	0.691	\$20.55	\$1.73	\$0.01	\$2.57
	0.000	0.699	\$20.59	\$1.57	\$0.01	\$2.57
2008	0.000	0.771	\$20.61	\$2.93	\$0.01	\$2.96
	0.000	0.763	\$20.65	\$2.81	\$0.01	\$2.92
2009	0.000	0.785	\$21.29	\$3.03	\$0.01	\$2.73
2010	0.000	0.731	\$21.49	\$2.31	\$0.01	\$1.85
2011	0.000	0.770	\$21.44	\$2.41	\$0.01	\$1.92
2012	0.000	0.663	\$22.12	\$1.71	\$0.01	\$2.79
2013	0.000	0.438	\$23.05	\$0.93	\$0.01	\$3.07
2014	0.000	0.574	\$22.30	\$2.02	\$0.00	\$3.94
2015	0.000	0.639	\$21.92	\$2.27	\$0.01	\$4.28
2016	0.000	0.881	\$22.44	\$1.22	\$0.01	\$6.95
2017	0.000	0.785	\$24.11	\$0.79	\$0.01	\$5.40
2018	0.000	0.774	\$24.88	\$0.74	\$0.01	\$4.30
2019	0.000	0.848	\$24.14	\$1.90	\$0.01	\$5.32
	0.000	0.848	\$24.14	\$1.90	\$0.01	\$5.32
2020	0.000	0.711	\$23.05	\$2.87	\$0.03	\$6.66
	0.000	0.711	\$23.05	\$2.98	\$0.03	\$6.66

Table 10

Year	Model Significance	R²	Intercept (Fire Protection Inspector)	Incumbent Rate	Tenure in Title	Construction Inspector	Elevator Inspector	Hoist and Rigging Inspector	Low-Pressure Boiler Inspector	Multi-Discipline Inspector	Plumbing Inspector
2005	0.000	0.660	\$19.65	\$0.91	\$0.01	\$2.29	---	\$2.60	\$4.23	---	\$3.01
2006	0.000	0.728	\$19.79	\$1.18	\$0.01	\$2.77	---	\$3.01	\$3.77	---	\$3.28
2007	0.000 0.000	0.706 0.711	\$20.50 \$20.54	\$1.79 \$1.63	\$0.01 \$0.01	\$2.42 \$2.45	---	\$2.79 \$2.79	\$3.70 \$3.68	---	\$2.97 \$2.96
2008	0.000 0.000	0.797 0.789	\$20.60 \$20.64	\$2.74 \$2.82	\$0.01 \$0.01	\$2.74 \$2.72	\$3.31 \$3.27	\$2.47 \$2.49	\$4.31 \$4.30	---	\$3.87 \$3.87
2009	0.000	0.789	\$21.29	\$3.01	\$0.01	\$2.64	\$3.17	\$3.45	\$3.26	---	\$2.76
2010	0.000	0.764	\$21.45	\$2.38	\$0.01	\$1.47	\$2.66	\$3.08	\$2.86	---	\$2.89
2011	0.000	0.802	\$21.44	\$2.43	\$0.01	\$1.49	\$2.06	\$3.02	\$2.98	---	\$3.12
2012	0.000	0.754	\$21.79	\$2.23	\$0.01	\$1.74	\$3.74	\$4.88	\$4.12	\$4.23	\$3.77
2013	0.000	0.781	\$22.28	\$1.81	\$0.01	\$1.51	\$3.71	\$8.83	\$3.88	\$6.48	\$3.88
2014	0.000	0.815	\$22.08	\$2.04	\$0.01	\$2.72	\$4.44	\$9.25	\$3.69	\$6.78	\$4.23
2015	0.000	0.814	\$22.08	\$1.69	\$0.01	\$3.23	\$5.06	\$9.38	\$4.69	\$7.74	\$4.80
2016	0.000	0.933	\$22.46	\$1.06	\$0.01	\$6.54	\$6.71	\$11.57	\$6.72	\$8.86	\$7.16
2017	0.000	0.893	\$24.09	\$0.80	\$0.01	\$5.17	\$5.14	\$10.15	\$5.05	\$7.00	\$5.36
2018	0.000	0.852	\$24.90	\$0.70	\$0.01	\$4.20	\$3.88	\$9.01	\$3.92	\$6.74	\$4.25
2019	0.000 0.000	0.912 0.912	\$24.20 \$24.20	\$1.78 \$1.78	\$0.01 \$0.01	\$5.12 \$5.12	\$5.41 \$5.41	\$10.16 \$10.16	\$5.24 \$5.24	\$10.73 \$10.73	\$5.31 \$5.31
2020	0.000 0.000	0.710 0.710	\$23.13 \$23.13	\$2.99 \$2.99	\$0.03 \$0.03	\$6.66 \$6.66	\$6.27 \$6.27	\$10.07 \$10.07	\$4.54 \$4.54	\$8.69 \$8.69	\$5.46 \$5.46

Table 11

Fiscal Year	FDNY	DOB	Difference	Statistically Significant
Incumbent Title Level 1				
2005	\$23.87	\$26.52	\$2.65	---
2006	\$24.64	\$27.29	\$2.65	---
2007	\$26.16	\$29.17	\$3.01	---
2008	\$27.23	\$30.77	\$3.54	---
2009	\$27.73	\$31.95	\$4.22	Yes
2010	\$27.73	\$31.52	\$3.79	Yes
2011	\$27.73	\$31.65	\$3.93	Yes
2012	\$27.73	\$32.00	\$4.28	Yes
2013	\$27.73	\$31.53	\$3.80	Yes
2014	\$27.73	\$33.17	\$5.44	Yes
2015	\$27.72	\$33.79	\$6.07	Yes
2016	\$27.72	\$34.77	\$7.05	Yes
2017	\$29.71	\$35.07	\$5.37	Yes
2018	\$30.61	\$35.19	\$4.59	Yes
2019	\$30.60	\$37.41	\$6.80	Yes
	\$30.60	\$36.95	\$6.35	Yes
2020	\$30.59	\$36.82	\$6.22	Yes
	\$30.59	\$37.05	\$6.46	Yes
Incumbent Title Level 2				
2005	\$26.44	\$30.05	\$3.60	Yes
2006	\$27.27	\$30.70	\$3.43	Yes
2007	\$28.93	\$32.89	\$3.96	Yes
	\$28.93	\$32.89	\$3.96	Yes
2008	\$30.05	\$34.99	\$4.95	Yes
	\$30.05	\$34.99	\$4.95	Yes
2009	\$31.20	\$36.25	\$5.05	Yes
2010	\$31.18	\$36.27	\$5.09	Yes
2011	\$31.18	\$36.37	\$5.19	Yes
2012	\$31.16	\$36.90	\$5.73	Yes
2013	\$31.15	\$35.90	\$4.74	Yes
2014	\$31.16	\$37.81	\$6.65	Yes
2015	\$31.08	\$38.55	\$7.46	Yes
2016	\$31.11	\$40.20	\$9.09	Yes
2017	\$33.34	\$40.07	\$6.73	Yes
2018	\$34.43	\$39.79	\$5.35	Yes
2019	\$34.31	\$42.26	\$7.95	Yes
	\$34.31	\$42.16	\$7.85	Yes
2020	\$34.31	\$43.11	\$8.80	Yes
	\$34.31	\$42.43	\$8.12	Yes

Table 12

Fiscal Year	Associate Fire Protection Inspector	Associate Inspector (Construction)	Associate Inspector (Elevators)	Associate Inspector (Hoists & Rigging)	Associate Inspector (Plumbing)	Associate Inspector (Boilers)
Incumbent Title Level 1						
2005	\$23.87	\$26.27	\$26.00	\$29.13	\$27.85	\$29.03
2006	\$24.64	\$27.09	\$27.19	\$28.51	\$27.54	\$29.93
2007	\$26.16	\$29.33	\$28.65	\$27.74	\$29.12	\$29.28
	\$26.16	\$29.33	\$28.65	\$29.65	\$29.12	\$29.28
2008	\$27.23	\$30.78	\$30.35	\$27.49	\$31.39	\$31.48
	\$27.23	\$30.78	\$30.35	\$27.49	\$31.39	\$31.48
2009	\$27.73	\$32.05	\$31.33	\$31.70	\$32.15	\$32.33
2010	\$27.73	\$31.29	\$32.01	\$31.70	\$32.54	\$32.76
2011	\$27.73	\$31.37	\$32.23	\$32.02	\$32.59	\$33.09
2012	\$27.73	\$31.81	\$32.30	\$32.34	\$32.76	\$33.42
2013	\$27.73	\$31.31	\$32.07	\$37.36	\$32.08	\$31.48
2014	\$27.73	\$33.08	\$33.59	---	\$33.92	\$32.92
2015	\$27.72	\$33.68	\$34.37	\$36.56	\$33.60	\$33.75
2016	\$27.72	\$34.80	\$35.64	\$37.65	\$31.94	\$34.76
2017	\$29.71	\$35.22	\$35.76	\$37.47	\$32.19	\$34.76
2018	\$30.61	\$35.43	\$35.19	\$37.29	\$33.17	\$34.76
2019	\$30.60	\$36.94	\$37.37	\$40.03	\$35.57	\$37.34
2020	\$30.59	\$37.09	\$35.63	\$40.03	\$35.56	\$37.34
Incumbent Title Level 2						
2005	\$26.44	\$29.54	\$29.82	\$33.19	\$30.66	\$32.18
2006	\$27.27	\$29.93	\$31.73	\$33.85	\$29.58	\$32.82
2007	\$28.93	\$32.68	\$33.01	\$35.21	\$32.33	\$34.94
	\$28.93	\$32.68	\$33.01	\$35.21	\$32.33	\$34.94
2008	\$30.05	\$35.12	\$34.60	---	\$34.84	\$36.05
	\$30.05	\$35.12	\$34.60	---	\$34.84	\$36.05
2009	\$31.20	\$36.34	\$35.87	---	\$36.21	\$37.03
2010	\$31.18	\$36.36	\$35.71	---	\$36.42	\$37.49
2011	\$31.18	\$36.33	\$36.07	---	\$36.79	\$37.87
2012	\$31.16	\$37.00	\$36.34	---	\$37.36	---
2013	\$31.15	\$36.13	\$35.90	---	\$33.78	\$36.77
2014	\$31.16	\$38.26	\$37.54	---	\$35.70	\$39.89
2015	\$31.08	\$38.93	\$38.48	\$41.06	\$36.68	\$40.88
2016	\$31.11	\$40.56	\$40.92	---	\$38.29	\$42.11
2017	\$33.34	\$40.44	\$41.20	---	\$38.29	\$42.11
2018	\$34.43	\$39.96	\$41.93	---	\$38.29	\$40.91
2019	\$34.31	\$42.31	\$43.20	---	\$41.11	\$43.90
	\$34.31	\$42.16	\$43.20	---	\$41.11	\$43.90
2020	\$34.31	---	\$41.15	---	---	\$44.09
	\$34.31	\$42.37	\$41.15	---	---	\$44.09

Table 13

Fiscal Year	Associate Fire Protection Inspector vs.				
	Associate Inspector (Construction)	Associate Inspector (Elevators)	Associate Inspector (Hoists & Rigging)	Associate Inspector (Plumbing)	Associate Inspector (Boilers)
Incumbent Title Level 1					
2005	---	---	---	---	---
2006	---	---	---	---	---
2007	---	---	---	---	---
	---	---	---	---	---
2008	---	---	---	---	---
	---	---	---	---	---
2009	\$4.32*	\$3.60*	---	\$4.42*	\$4.60*
2010	\$3.56*	\$4.28*	---	\$4.81*	\$5.03*
2011	\$3.65*	\$4.50*	---	\$4.86*	\$5.36*
2012	\$4.08*	\$4.57*	---	\$5.03*	\$5.69*
2013	\$3.58*	\$4.34*	---	\$4.35*	---
2014	\$5.35*	\$5.20*	---	\$6.19*	---
2015	\$5.96*	\$6.66*	---	\$5.89*	---
2016	\$7.09*	\$7.93*	---	\$4.22*	---
2017	\$5.51*	\$6.05*	---	\$2.49*	---
2018	\$4.82*	\$4.58*	---	\$2.56*	---
2019	\$7.02*	\$6.76*	---	\$4.97*	---
	\$6.34*	\$6.76*	---	\$4.97*	---
2020	---	---	---	\$4.97*	---
	\$6.45*	---	---	\$4.97*	---
Incumbent Title Level 2					
2005	\$3.10*	\$3.37*	---	\$4.22*	---
2006	\$2.65*	\$4.45*	---	\$2.31*	---
2007	\$3.75*	\$4.09*	---	\$3.40*	---
	\$3.75*	\$4.09*	---	\$3.40*	---
2008	\$5.07*	\$4.56*	---	\$4.79*	---
	\$5.07*	\$4.56*	---	\$4.79*	---
2009	\$5.14*	\$4.67*	---	\$5.01*	---
2010	\$5.17*	\$4.53*	---	\$5.24*	---
2011	\$5.15*	\$4.89*	---	\$5.61*	---
2012	\$5.84*	\$5.18*	---	\$6.19*	---
2013	\$4.98*	\$4.75*	---	\$2.63*	---
2014	\$7.10*	\$6.38*	---	\$4.54*	---
2015	\$7.85*	\$7.39*	---	\$5.60*	---
2016	\$9.45*	\$9.82*	---	\$7.18*	---
2017	\$7.10*	\$7.68*	---	\$4.95*	---
2018	\$5.53*	\$7.50*	---	\$3.86*	\$6.48*
2019	\$8.00*	\$8.89*	---	\$6.81*	\$9.59*
	\$7.86*	\$8.89*	---	\$6.81*	\$9.59*
2020	---	---	---	---	---
	\$8.07*	---	---	---	---

Table 14

Year	Model Significance	R ²	Intercept	Incumbent Rate	Tenure in Title	Title Level	Agency
2005	0.000	0.618	\$18.76	\$1.49	\$0.01	\$2.84	\$3.35
2006	0.000	0.603	\$20.23	\$0.62	\$0.01	\$2.90	\$3.32
2007	0.000	0.579	\$20.10	\$1.77	\$0.01	\$3.11	\$3.88
	0.000	0.577	\$20.10	\$1.79	\$0.01	\$3.09	\$3.88
2008	0.000	0.572	\$20.77	\$1.74	\$0.01	\$3.27	\$4.63
	0.000	0.572	\$20.77	\$1.74	\$0.01	\$3.27	\$4.63
2009	0.000	0.698	\$19.51	\$4.37	\$0.01	\$3.27	\$4.48
2010	0.000	0.669	\$19.54	\$4.06	\$0.01	\$3.29	\$4.26
2011	0.000	0.667	\$23.92	---	\$0.01	\$3.05	\$4.15
2012	0.000	0.673	\$23.76	---	\$0.01	\$3.19	\$4.54
2013	0.000	0.681	\$23.96	---	\$0.01	\$3.18	\$3.92
2014	0.000	0.740	\$23.66	---	\$0.01	\$3.31	\$5.78
2015	0.000	0.795	\$21.60	\$2.28	\$0.01	\$3.28	\$6.52
2016	0.000	0.824	\$22.25	\$1.34	\$0.01	\$3.40	\$7.83
2017	0.000	0.797	\$28.06	-\$2.26	\$0.01	\$3.33	\$5.64
2018	0.000	0.810	\$26.79	---	\$0.01	\$3.38	\$4.65
2019	0.000	0.863	\$26.63	---	\$0.01	\$3.44	\$7.10
	0.000	0.854	\$22.81	\$3.67	\$0.01	\$3.46	\$6.88
2020	0.000	0.949	\$26.84	---	\$0.01	\$3.62	\$6.99
	0.000	0.878	\$26.45	---	\$0.01	\$3.50	\$6.93

Table 15

Year	R ²	Intercept (Assoc. Fire Protection Inspector)	Incumbent Rate	Tenure in Title	Title Level	Associate Construction Inspector	Associate Elevator Inspector	Associate Hoist and Rigging Inspector	Associate Low-Pressure Boiler Inspector	Associate Plumbing Inspector	Associate Boiler Inspector
2005	0.726	\$18.72	\$1.32	\$0.01	\$2.92	\$3.02	\$3.01	\$5.77	\$5.88	\$4.74	\$5.96
2006	0.666	\$20.00	\$0.81	\$0.01	\$2.90	\$2.91	\$3.75	\$5.12	\$6.00	\$3.29	\$5.72
2007	0.587	\$20.16	\$1.67	\$0.01	\$3.10	\$3.92	\$3.54	\$4.20	---	\$4.05	\$4.89
	0.586	\$20.18	\$1.67	\$0.01	\$3.09	\$3.91	\$3.53	\$4.81	---	\$4.04	\$4.88
2008	0.596	\$20.66	\$1.76	\$0.01	\$3.28	\$4.70	\$4.02	\$1.72	\$7.00	\$5.48	\$5.72
	0.596	\$20.66	\$1.76	\$0.01	\$3.28	\$4.70	\$4.02	\$1.72	\$7.00	\$5.48	\$5.72
2009	0.703	\$19.64	\$4.24	\$0.01	\$3.26	\$4.51	\$3.95	\$4.46	\$4.78	\$4.86	\$5.38
2010	0.679	\$19.70	\$3.92	\$0.01	\$3.27	\$4.06	\$4.37	\$4.56	\$4.90	\$5.19	\$5.58
2011	0.679	\$23.95	---	\$0.01	\$3.04	\$3.91	\$4.28	\$4.62	\$4.68	\$5.14	\$5.67
2012	0.680	\$23.75	---	\$0.01	\$3.19	\$4.38	\$4.51	\$4.91	\$5.10	\$5.48	\$5.66
2013	0.697	\$23.93	---	\$0.01	\$3.19	\$3.81	\$4.17	\$9.68	\$4.35	\$3.88	\$4.65
2014	0.744	\$23.57	---	\$0.01	\$3.36	\$5.79	\$5.82	---	\$7.23	\$5.41	\$6.99
2015	0.806	\$21.92	\$1.83	\$0.01	\$3.36	\$6.51	\$6.64	\$10.03	\$9.29	\$5.74	\$7.80
2016	0.835	\$22.11	\$1.24	\$0.01	\$3.58	\$7.95	\$8.61	\$10.66	\$9.95	\$6.53	\$9.00
2017	0.815	\$24.75	\$0.81	\$0.01	\$3.51	\$5.86	\$6.22	\$8.28	\$8.95	\$4.15	\$6.63
2018	0.829	\$26.54	---	\$0.01	\$3.54	\$4.79	\$5.09	\$7.14	\$7.18	\$3.49	\$5.41
2019	0.875	\$26.44	---	\$0.01	\$3.55	---	\$7.16	\$9.87	\$9.66	\$6.00	\$8.19
	0.867	\$22.71	\$3.56	\$0.01	\$3.57	\$6.87	\$7.18	\$9.99	\$9.78	\$6.03	\$8.17
2020	0.973	\$26.80	---	\$0.01	\$3.67	---	\$6.03	\$9.51	\$9.37	\$5.02	\$8.15
	0.887	\$26.41	---	\$0.01	\$3.52	\$6.92	\$6.41	\$9.82	\$9.52	\$5.31	\$7.88